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10/828,546	04/19/2004	Kern W. Wong	P05310C1	3883
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/828,546	<b>Applicant(s)</b> WONG ET AL.	
	<b>Examiner</b> Gary L. Laxton	<b>Art Unit</b> 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 28, 29, 32, 40, 43-45, 47 and 48 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 44 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Guenot et al.

Guenot et al. disclose a band-gap reference circuit (figure 1) comprising: a current source (6B); a circuit branch (R1, 8B) coupled to the current source for receiving current generated by the current source, the circuit branch includes a resistor(R1) having a positive temperature coefficient connected in series with a base-emitter diode (8B) having a negative temperature coefficient, wherein the current develops a combined voltage across the series connection of the resistor and the base-emitter diode; a further base-emitter diode (8A); an adjustment circuit (12) for adjusting a band-gap reference voltage (V<sub>bg</sub>) based on the combined voltage and a base-

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emitter voltage of the further base-emitter diode; and a correction circuit (R2, 10) coupled to the adjustment circuit and cooperable therewith for at least partially offsetting a drop-off in the band-gap reference voltage caused by the further base-emitter diode (8A). More specifically, referring to the drawings, FIG. 1 is a diagram of one such band gap reference circuit. A pair of vertical PNP transistors 8A and 8B are included which are diode-connected with the base and collectors of each transistor being connected to an operational amplifier 12. In operation, amplifier 12 controls the gate-source voltage of transistors 6A, 6B and 6C such that the voltages at nodes A and B are equal. And, Guenot et al. also disclose that the  $V_{be}$  of transistor 8A is, for example, 650 mV. The band gap output voltage  $V_{bg}$  is then the sum of the base-emitter voltage of transistor 10, voltage  $V_{be}(10)$ , and the voltage drop across resistor R2, voltage  $V(R2)$ . Since the base-emitter voltage  $V_{be}(10)$ , typically 650 mV, has a negative temperature coefficient, the value of resistor R2 is selected so that a positive temperature coefficient voltage  $V(R2)$  is produced having a magnitude sufficient to offset the negative temperature coefficient of voltage  $V_{be}(10)$ . Setting resistor R2 to 1.2 Meg ohms will produce a voltage  $V(R2)$  of about 600 mV. Adding the voltage across base emitter  $V_{be}$  of 10 and the voltage drop across resistor R2, this will produce a band gap output voltage  $V_{bg}$  of 1.25 volts (600 mV and 650 mV) having the desired first order zero temperature coefficient. The 600 mV of voltage drop across R2 is considered to offset, at least “partially”, the voltage  $V_{be}$  of further base emitter diode (8A).

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4. Claims 44 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Ju.

Ju discloses a band-gap reference circuit (figure 2) comprising: a current source (M2); a circuit branch (Resistor, Q2) coupled to the current source for receiving current generated by the current source, the circuit branch includes a resistor having a positive temperature coefficient connected in series with a base-emitter diode (Q2) having a negative temperature coefficient, wherein the current develops a combined voltage across the series connection of the resistor and the base-emitter diode; a further base-emitter diode (Q1); an adjustment circuit (Ao) for adjusting a band-gap reference voltage ( $V_{ref}$ ) based on the combined voltage and a base-emitter voltage of the further base-emitter diode; and a correction circuit (202,  $R_E$ , Q3,  $R_B$ ) coupled to the adjustment circuit and cooperable therewith for at least partially offsetting a drop-off in the band-gap reference voltage caused by the further base-emitter diode (Q1) (e.g. generates fractional voltage  $V_{EB}$  which “partially” offsets the drop off voltage: col. 2 lines 14 and 15, lines 61-67).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 28, 29, 32 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenot et al. or Ju in view of Marty.

Guenot et al. disclose a band-gap reference circuit (figure 1) comprising: a current source (6B); a circuit branch (R1, 8B) coupled to the current source for receiving current generated by the current source, the circuit branch includes a resistor(R1) having a positive temperature coefficient connected in series with a base-emitter diode (8B) having a negative temperature coefficient, wherein the current develops a combined voltage across the series connection of the resistor and the base-emitter diode; a further base-emitter diode (8A); an adjustment circuit (12) for adjusting a band-gap reference voltage (V<sub>bg</sub>) based on the combined voltage and a base-emitter voltage of the further base-emitter diode; and a correction circuit (R2, 10) coupled to the adjustment circuit and cooperable therewith for at least partially offsetting a drop-off in the band-gap reference voltage caused by the further base-emitter diode (8A).

Along the same with Guenot et al., Ju also discloses a band-gap reference circuit (figure 2) comprising: a current source (M2); a circuit branch (Resistor, Q2) coupled to the current source for receiving current generated by the current source, the circuit branch includes a resistor having a positive temperature coefficient connected in series with a base-emitter diode (Q2)

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having a negative temperature coefficient, wherein the current develops a combined voltage across the series connection of the resistor and the base-emitter diode; a further base-emitter diode (Q1); an adjustment circuit (Ao) for adjusting a band-gap reference voltage ( $V_{ref}$ ) based on the combined voltage and a base-emitter voltage of the further base-emitter diode; and a correction circuit (202,  $R_E$ , Q3,  $R_B$ ) coupled to the adjustment circuit and cooperable therewith for at least partially offsetting a drop-off in the band-gap reference voltage caused by the further base-emitter diode (Q1) (e.g. generates fractional voltage  $V_{EB}$  which “partially” offsets the drop off voltage: col. 2 lines 14 and 15, lines 61-67).

However, neither Guenot et al. or Ju disclose a startup circuit.

Marty a regulator circuit including a startup circuit (20) connected to the output of an adjustment circuit (5) for ensuring proper startup of the regulator circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Guenot et al. or Ju to include a startup circuit to ensure the proper startup of the circuit as taught by Marty.

8. Claims 40, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenot et al. or Ju in view of May.

Guenot et al. disclose a band-gap reference circuit (figure 1) comprising: a current source (6B); a circuit branch ( $R_1$ , 8B) coupled to the current source for receiving current generated by the current source, the circuit branch includes a resistor( $R_1$ ) having a positive temperature coefficient connected in series with a base-emitter diode (8B) having a negative temperature coefficient, wherein the current develops a combined voltage across the series connection of the

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resistor and the base-emitter diode; a further base-emitter diode (8A); an adjustment circuit (12) for adjusting a band-gap reference voltage ( $V_{bg}$ ) based on the combined voltage and a base-emitter voltage of the further base-emitter diode; and a correction circuit (R2, 10) coupled to the adjustment circuit and cooperable therewith for at least partially offsetting a drop-off in the band-gap reference voltage caused by the further base-emitter diode (8A).

Along the same with Guenot et al., Ju also discloses a band-gap reference circuit (figure 2) comprising: a current source (M2); a circuit branch (Resistor, Q2) coupled to the current source for receiving current generated by the current source, the circuit branch includes a resistor having a positive temperature coefficient connected in series with a base-emitter diode (Q2) having a negative temperature coefficient, wherein the current develops a combined voltage across the series connection of the resistor and the base-emitter diode; a further base-emitter diode (Q1); an adjustment circuit (Ao) for adjusting a band-gap reference voltage ( $V_{ref}$ ) based on the combined voltage and a base-emitter voltage of the further base-emitter diode; and a correction circuit (202,  $R_E$ , Q3,  $R_B$ ) coupled to the adjustment circuit and cooperable therewith for at least partially offsetting a drop-off in the band-gap reference voltage caused by the further base-emitter diode (Q1) (e.g. generates fractional voltage  $V_{EB}$  which “partially” offsets the drop off voltage: col. 2 lines 14 and 15, lines 61-67).

However, neither Guenot et al. or Ju disclose integrated circuit for a cellular telephone comprising regulation circuitry and a bandgap circuit, or analog to digital circuitry for converting analog signals to digital signals to be used by the integrated circuitry.



May teaches an integrated circuit for a cellular telephone comprising regulation circuitry and a bandgap circuit; and furthermore, May discloses analog to digital circuitry for converting analog signals to digital signals to be used by the integrated circuitry.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Guenot et al. or Ju to include analog to digital circuitry and regulation circuitry to be used in a cellular telephone in order to converter and regulate analog signals into digital signals to be used by the cellular telephone integrated circuitry for proper operation of the telephone by providing proper regulated current and voltages to the circuitry.

***Allowable Subject Matter***

9. Claims 23, 24, 27, 38, 39, 41, 42 and 46 are still considered to disclose allowable subject matter for the same reasons mentioned in previous office action dated 3/26/2007.

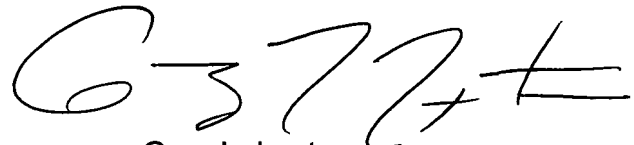
10. Claims 30, 31 and 33-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'G-L Laxton', with a stylized flourish at the end.

Gary L. Laxton  
Primary Examiner  
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10/15/2007